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## The effect of an interdisciplinary Greek traditional dance, music, and sociology program on male and female students' anxiety

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### Abstract

The aim of this study was to investigate the effect of an interdisciplinary program of Greek traditional dance with issues from music and sociology on high school students' anxiety. 131 students (68 males & 63 females), between the ages from 12 to 13 yrs., participated. The experimental group (n=62) followed the new eight-week program (two lessons/week) while the control group (n=69) followed the typical physical education program. To evaluate students' anxiety during lessons, the Competitive State Anxiety Inventory-2 (Martens, Burton, Vealey, Bump, & Smith, 1990) was used with its 3 dimensions (somatic, cognitive anxieties, & self-confidence). Students completed it before the initiation of the intervention and after its completion. The following statistical analyses were performed: a) Factor Analysis, b) Cronbach's alpha test, and c) Anova with Repeated Measures. Results showed that a. "Somatic anxiety", "cognitive anxiety" and "self confidence" accounted for 83% and 73%, respectively, of the total variance b) Cronbach's alpha was satisfactory (ranging from .66, .78 and .71 for the initial and from .87, .94 and .89 for the final measure), c) the experimental group decreased the levels of somatic and cognitive anxieties and enhanced their self-confidence. Also, male students increased their self-confidence more than female students. These findings support the view that an interdisciplinary program of traditional Greek dance and topics from music and sociology reduces the rates of somatic and cognitive anxieties while simultaneously increases students' self-confidence's levels, and especially those of males.

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## 1. Introduction

One of the drawbacks of teaching separate subjects is the dichotomized and partial offering of knowledge. This drawback can be counterbalanced through cross curricular and interdisciplinary teaching (Kaprinis, Diggelidis, & Papaioannou, 2009). The cross curricular approach provides the student with the opportunity to acquire a complete body of knowledge (Matsagouras, 2003), since in a cross curricular project the organization of the timetable is such that the dividing lines between the various disciplines cease to exist (Wolfinger & Stockard, 1997).

One of the subjects that offers the chance for a cross curricular approach with many other disciplines is Physical Education. Experiential learning and skills development (Kalyn, 2005), the combination of dance with Geography as well as the enhancement of expression and creativity in cooperation with language and art (Goti, Derri, & Kioumourtzoglou, 2006) are some of the results of the cross curricular approach to Physical Education.

One of the activities that can lead to a multiple activation of the participants is dance, which is, on the one hand, a recreational activity, a means of socialization and a contact with the culture of a people (Filippou et al., 2006) and, on the other, it contributes to the improvement of the physical skills relating to health (Mavridis, Filippou, Rokka, Bousiou, & Mavridis, 2004; Sivvas, Filippou, Batsiou, & Douda, 2013).

The teacher-centered method and in particular, the method of giving orders is put forward by some researchers as the most appropriate teaching method of Greek folk dance, since its teaching aims at the precise learning and performing of the kinetic part of the dance following the music (Serbezis, 2012). The cross curricular method of teaching folk dance, which is based on the holistic approach to folk dance (both kinetic and cultural), and, consequently on its equal effect on the three aspects of the student's personality (bodily-kinetic, emotional and cognitive) (Pitsi, Diggelidis, & Filippou, 2013), constitutes the counterargument of some other researchers, who support the idea that cross curricular approach can lead to the development of attitudes and skills towards life in general (Stivaktaki, Mpourneli, & Mountakis, 2009).

It is widely known that stress is one of the main characteristics of childhood and adolescent life, chiefly because of increasing school demands (Kraag, Zeegers, Kok, Hosman, & Abu-Saad, 2006). Many researchers have noticed the inducement of certain physiological symptoms in schoolchildren because of stress (Murberg & Bru, 2007), like headaches, stomachaches and sleep difficulties (Lohaous, 1990).

Diagnosing and then fighting stress are considered extremely important, as a stressed student lacks the necessary concentration, memory and attention, all three much needed and crucial skills for the learning process and his/her good performance. Nestoros and Vallianatou (1996) claim that fighting stress and, as a consequence, overcoming cognitive malfunctions caused by it, enables students to make full use of their potential, while, simultaneously, to trust themselves and gain self-confidence, the contribution of which in sports, school and everyday life has been proven by many researchers (Woodman & Hardy, 2003; Beattie, Hardy & Woodman, 2004).

The aim of the Physical Education course also in high school is "the development of students' kinetic skills and through them their health improvement" (Government Gazette, Vol B', p. 4281, 2003). Dance is such a kinetic activity, which first contributes to students' kinetic activities development and secondary to the improvement of their physical and mental health. Past research in adults dancers indicated that participation in organized lessons of modern dance reduces stress which caused by everyday life problems (Sivvas, Filippou, Batsiou, & Douda, 2013).

The aim of this study was to investigate the effect of an interdisciplinary program of Greek traditional dance with issues from music and sociology on high school students' anxiety levels.

## 2. Methodology

### 2.1. Sample

The sample of the study constituted of 131 students (68 males & 63 females), between the ages from 12 to 13 yrs. old. There were divided into two groups, the experimental (n=62), who participated in an intervention program for a period of eight weeks (two lessons/week) and the control (n=69), who followed the typical weekly physical education program.

## 2.2. Intervention program

The intervention program lasted eight weeks. Sixteen (16) cross curricular classes of Greek folk dances with topics from music and sociology were held for the experimental team. The classes were held during school timetable Physical Education sessions/classes. Both the experimental and the control teams, during the sixteen weeks of the research, attended classes with the same educational targets.

## 2.3. Measurement

To evaluate students' anxiety during classtime, the Greek version of the "Competitive State Anxiety Inventory-2" was used (Kakkos&Zervas, 1996). The scale consists of 15 questions divided into three factors: a) "somatic anxiety", b) "cognitive anxiety", and c) "self confidence". The answers were given in a five-point Likert type scale, where 1 was "absolutely disagree" and 5 was "absolutely agree".

## 2.4. Measurement process

The questionnaires were anonymous. Students gave their consent for their attendance in the study. The completion of questionnaire was anonymous and it was carried out in within school.

## 3. Results

### 3.1. Validity and reliability of questionnaire

#### 3.1.1. Factor analysis of the CSAI-2 Inventory

For the preliminary examination of the structural validity of the questionnaire, a principal component analysis of the main axes was used. From the analysis, three factors emerged, which explained 83% of the variability of the satisfaction of the students (Table 1). It needs to be noticed that the variables in the present study, showed similar loadings to those mentioned by (Martens, Burton, Vealey, Bump, & Smith, 1990).

Table 1. Principal component analysis: Loadings on CSAI-2 Inventory.

Items	Factors		
Somatic anxiety	Cognitive anxiety	Self confidence	
I am concerned that I may not do as well in this competition as I could		.899	
My body feels tense	.924		
I feel self-confident		.610	
I am concerned about losing		.923	
I feel tense in the stomach	.925		
I am confident I can meet the challenge			.799
I am concerned about performing poorly		.898	
My heart is racing	.902		
I'm confident about performing well			.789
I'm concerned about reaching my goal		.920	
I feel my stomach sinking	.921		
I'm concerned that others will be disappointed with my performance		.916	
I'm confident because I mentally picture myself reaching my goal			.852
My body feels tight	.932		
I'm confident at coming through under pressure			.864
KMO	.880		
Total variance:	82.91		
Eigenvalues	7.422 79 2.23		

Descriptive statistics were computed for all assessed variables and are presented in Table 2. The results indicated that all scales showed acceptable internal consistency since Cronbach's alpha was higher than .70.

Table 2.Descriptive Statistics

Factors	M		S.D.		Cronbach's a	
	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>
Somatic anxiety	3.24	2.65	.97	.65	.71	.87
Cognitive anxiety	3.15	2.18	1.16	.69	.78	.94
Self confidence	2.73	3.39	.90	.74	.81	.89

### 3.1.2. Univariate analyses

Univariate analyses were conducted in order to find any group differences. The analyses revealed statistically significant group differences:

a) For the variable of "Somatic Anxiety" ( $F(1,131)=71.00$ ;  $p<.05$ ). Post hoc multiple comparisons Sidak test indicated the differences occurred only within the experimental group. More specifically, somatic anxiety was reduced from the initial measurement ( $M=2.85$  &  $SD=.78$ ), to the final ( $M=2.30$  &  $SD=.51$ ). No sex differences were indicated.

b) For the variable of "Cognitive Anxiety" ( $F(1,131)=92.82$ ;  $p<.005$ ). Post hoc multiple comparisons Sidak test indicated the differences occurred within the experimental group, where cognitive anxiety was reduced between measurements (initial measurement  $M=2.52$  &  $SD=.69$ , final measurement  $M=1.84$  &  $SD=.44$ ). On the contrary, cognitive anxiety among control group members was increased between measurements (initial measurement  $M=2.07$  &  $SD=.68$ , final measurement  $M=2.11$  &  $SD=.63$ ). No sex differences were indicated.

c) For the variable of "Self-confidence" ( $F(1,131)=89.77$ ;  $p<.05$ ). Post hoc multiple comparisons Sidak test indicated the differences occurred only within the experimental group. More specifically, self-confidence was increased between the two measurements (initial measurement  $M=1.62$  &  $SD=.39$ , final measurement  $M=2.65$  &  $SD=.56$ ). Additionally, boys increased their levels of self - confidence (initial measurement  $M=1.79$  &  $SD=.60$ , final measurement  $M=2.55$  &  $SD=.68$ ) in comparison to girls (initial measurement  $M=1.72$  &  $SD=.50$ , final measurement  $M=2.10$  &  $SD=.51$ ).

## 4. Discussion

The aim of this study was to investigate the effect of an interdisciplinary program of Greek traditional dance with issues from music and sociology, on high school students' anxiety levels. From the analysis of the results it seems that there was a significant reduction of the percentage of both the somatic and cognitive anxiety of the experimental team students after each measurement. On the contrary, although the control team students also showed a reduction in their percentage, this was of minor significance statistically. On the other hand, the results showed an important increase, after each measurement, in the percentage of the self - confidence of the experimental team members, while the relevant percentage of self-confidence of the control team students were insignificant statistically.

The results of the research come into contrast with the results of Kaprinis, Diggelidis and Papaioannou (2009), in which the students of the experimental team showed increased percentages of somatic and cognitive anxiety. This differentiation of results might possibly stem from the different objects of the research, folk dance for the present research and Physical education in the research of Kaprinis, Diggelidis and Papaioannou (2009).

Probably, this differentiation is due the content of the interdisciplinary approach which in this investigation was consisted of music and sociology issues, while in the research of Kaprinis, Diggelidis and Papaioannou (2009) came from mathematics. Moreover, dance constitutes an activity which contributes to the socialization process of a person (Mihaltsi, 2008), to the banishment of boredom and monotony (Kipourou, 2009).

Finally, sex turns out to be a decisive factor of differentiation, with boys showing a greater increase in the percentage of self-confidence than girls. This result is quite impressive, given the fact that boys do not like spending time on activities like dance (Filippou, 2002). Previous researches only on sports domain have been shown that male

athletes have greater levels than female ones, on sport specific tasks (Bebetsos&Konstantoulas, 2006; Bebetsos&Antoniou, 2012).

These findings support the writers' view that an interdisciplinary program of traditional Greek dance and topics from music and sociology reduces the rates of somatic and cognitive anxieties while simultaneously increases students' self-confidence's levels, and especially those of males.

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